L 52316-65

ACCESSION NR: AP5011773
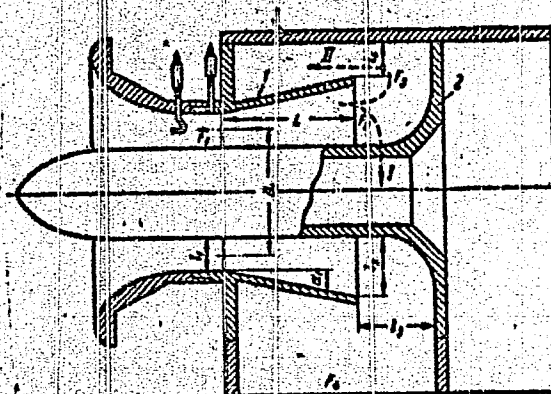
Fig. 1.
Scheme of the exhaust nozzle

Card 3/3

DEYCH, M.Ye., senior tehhnician, prof.: Ikke...

Effect of the angle of departure on the ...
turbine lattices with large fan pattern. Izv...
8 ...10:58-62 O '59.

1, Moskovskiy ordena Lenina energeticheskiy institut, ...
kafedry parovykh i gazovykh turbin.

DEYCH, M. Ye., doktor tekhn. nauk, prof.; SHEYNKMAN, A.G., kand. tekhn. nauk; FILIPPOV, G.A., kand. tekhn. nauk; BARANOV, V.A., kand. tekhn. nauk; KIRSANOVA, A.A., inzh.; MIKHAYLOV, B.A., inzh.

Experimental study of a model take-off regulatory stage with a rotary diaphragm. Energomashinostroenie. 11 no.2:14-17 F'65.

(MIRA 18:4)

DEYCH, M.Ye., doktor tekhn. nauk, prof.; STEPANCHUK, V.F., kand. tekhn. nauk;
SALTANOV, G.A., inzh., dissertant

Calculation of condensation jumps in the wet steam region. Teplo-
energetika 12 no.4:81-84. Ap '65.   (MIRA 18:5)

1. Moskovskiy energeticheskiy institut.

DEYCH, M.Ye., doktor tekhn. nauk, prof.; ZARYANKIN, A.Ye., kand. tekhn.
nauk; ZATSEPIN, M.F., kand. tekhn. nauk

Results of the studies of the exhaust pipes of turbomachines with
ring shaped diffusers. Teploenergetika 12 no.5:40 -44. My '65.
                                                    (MIRA 18:5)

1. Moskovskiy energeticheskiy institut.

DEYCH, M.Ye., doktor tekhn. nauk, prof.; STEPANCHUK, V.F., kand. tekhn. nauk, dotsent; MAYORSKIY, Ye.V., inzh.; SALTANOV, G.A., inzh.

Use of an optical method in studying the flow of wet steam.
Izv. vys. ucheb. zav.; energ. 8 no.11:87-91 N '65.
(MIRA 18:11)

1. Moskovskiy ordena Lenina energeticheskiy institut.

L 18561-66   EWT(m)/EWP(w)/EWP(v)/T-2/EWP(k)/ETC(m)-6   EM
ACC NR: AP6006428   SOURCE CODE: UR/0143/65/000/010/0056/0062

AUTHOR: Deych, M. Ye. (Doctor of technical sciences, Professor); Kiselev, L. Ye.
(Engineer); Krupennikov, B. N. (Engineer)

ORG: Moscow "Order of Lenin" Power Engineering Institute (Moskovskiy ordena Lenina
energeticheskiy institut)

TITLE: Effect of the departure angle on the characteristics of radially expanding
turbine blading

SOURCE: IVUZ. Energetika, no. 10, 1965, 56-62

TOPIC TAGS: turbine blade, flow angle, turbine design

ABSTRACT: The characteristics of radial turbine blading with a d/l ratio of 2.5 were
studied in subsonic air streams at departure angles of 9, 12, 15 and 18^b. The wheels
studied were made up of 30 vanes with a height $l=100$ mm and identical geometric
characteristics in all cases with the exception of the departure angle. The flow
parameters were measured in front of and behind the blading. Measurements were made
at ten points between blades, in 15-25 sections along the height of the blade and
at distances $s=5$, 15, 25 mm from the outlet edge of the blades which corresponds to

Card 1/3   UDC: 621.165

L 18564-66
ACC NR: AP6006428

$\bar{z}=z/b=0.125$, 0.375, 0.625. The resultant data were used for determining the distribution of the following parameters with respect to the height of the blading: breaking pressure p_{01}, static pressure p_1, and flow departure angles a_1 and a_2 in the meridian direction. Angle a_1 is measured between the projection of velocity c_1 on the cylindrical surface and the direction of the periferal component of velocity c_{1u}; angle a_2 is measured between the vector of velocity c_1 and its projection on the cylindrical surface. It was found that an increment in the effective angle of departure increases the difference between the static pressures at the periphery and root of the blading due to a reduction in energy losses and a corresponding increase in the velocity of the departing air at the root section. Measurements of departure angles a_1 show that they are greater than the effective departure angles. When the effective departure angle is increased, the difference between the average value of the measured angle and the effective angles is reduced, which may also be explained by a reduction in energy losses and less redistribution in the rate of air flow with respect to height. The average values of the meridian angles with respect to blading height $(a_2)_{av}$ are a linear function of the effective departure angle:

$(a_2)_{av}=0^{\circ}$ for $\bar{z}=0.125$ at an effective departure angle of 15°. At smaller effective departure angles, the average values of a_2 are positive, which corresponds to de-

Card 2/3

L 18554-66
ACC NR: AP6006428

flection of the line of flow from the root to the periphery. This is due both to
a high degree of twisting in the stream and to the highly developed region of ener-
gy losses in the lower half of the turbine blading. The effective departure angle
has a considerable effect on the distribution of energy losses, particularly in
the root section. There is a sharp reduction in energy losses with an increase in
the effective angle of departure, especially at great distances from the vanes.
Experimental data show a predetached flow and extremely high energy losses in radial-
ly expanding turbine blading arrangements with effective departure angles of less
than 15°. Orig. art. has: 7 figures.

SUB CODE: 10,13/   SUBM DATE: 18Jul64/   ORIG REF: 000/   OTH REF: 000

Card 3/3

ACC NR: AP7001449   (N)   SOURCE CODE: UR/0413/66/000/021/0184/0184

INVENTORS: Deych, M. Ye.; Sheynkman, A. G.

ORG: none

TITLE: A regulating diaphragm of a turbine engine. Class 46, No. 188222

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 21, 1966, 184

TOPIC TAGS: turbine engine, engine component, rotating engine

ABSTRACT: This Author Certificate presents a regulating diaphragm of a turbine engine. The diaphragm contains a rotary ring with supports and a directing device with blades which form elongations of the supports. To be used in radial and radial-axial type turbines, the supports and the blades are placed on a cylindrical surface (see Fig. 1). In an alternate design, one or both walls at the intake portion of the ducts in the rotary ring and in the directing device are placed at a desired angle to the tangent plane of the cylindrical surface at the junction of the rotary ring and the directing device.

Card 1/2   UDC: 62-226-546.5

ACC NR: AP7001449

Fig. 1. 1 - diaphragm; 2 - rotary ring;
         3 - supports; 4 - directing
         device; 5 - blade

Rotor

A-A
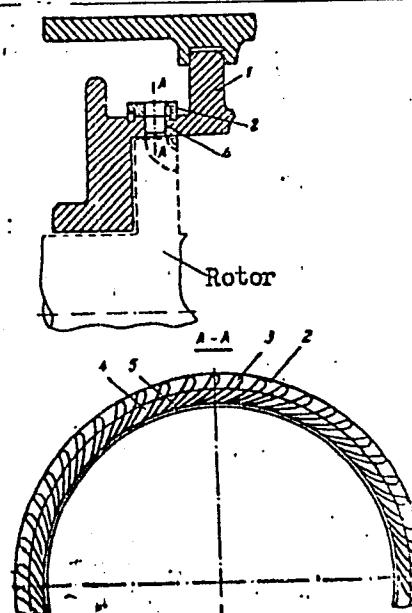
Orig. art. has: 1 figure.

SUB CODE: 21 / SUBM DATE: 03May63

Card 2/2

DAVIDSON, Veniamin Yevgen'yevich; DEYCH, M.Ye., prof., dokt r
tekhn. nauk, retsenzent; LAZAREV, L.Ya., inzh.;
retsenzent; SELIVERSTOVA, A.I., red.

[Fundamentals of gas dynamics in problems] Osnovy gazovoy
dinamiki v zadachakh. Moskva, Vysshaia shkola, 1965. 206 p.
(MIRA 18:8)

DEYCH, R.S., inzhener.

Standardized switchboards permitting one-sided or two-sided servicing.
Prom. energ. 11 no.10:27-31 O '56.   (MLRA 9:11)
      (Electric switchgear)

DEYCH, R.S., inzhener; LIVSHITS, M.L., inzhenor.

The VES-4 mobile electric power station. Mekh.stroi. 13 no.10: 20-22 O '56.   (MLRA 9:11)

(Electric power plants)

GRINBERG, Georgiy Samoylovich; DEYCH, Roman Savel'yevich; KAMINSKIY,
Ye.A., red.; SHIROKOVA, M.M., tekhn. red.

[Electrical installation and wiring materials] Elektro-
montazhnye izdeliia. Moskva, Gos. energ. izd-vo, 1961. 55 p.
(Biblioteka elektromontera, no.46)   (MIRA 15:4)
        (Electric wiring--Equipment and supplies)

GRINBERG, G.S., inzh,; DEYCH, R.S., inzh.

Conduits for installing cables. Mont. i spets. rab. v stroi. 24
no.4:24-25 Ap '62.   (MIRA 15:7)

1. TSentral'noye proyektno-konstruktorskoye byuro Gosudarstvennogo
soyuznogo trest~ ~~oizvodstvennykh predpriyatiy Glavelektromontazha
Minist~rstv: stroitel'stva predpriyatiy metallurgicheskoy i
khimicheskoy promyshlennosti SSSR.
          (Electric wiring, Interior)

GRINBERG, Georgiy Samoylovich; DEYCH, Roman Savel'yevich;
    KAMINSKIY, Ye.A., red.; FRIDKIN, L.M., tekhn. red.

[Unit devices of electrical systems with ratings up to
500 volts] Komplektnye ustroistva elektrotekhnicheskikh
ustanovok do 500 v. Moskva, Gosenergoizdat, 1963. 69 p.
(Biblioteka elektromontera, no.101)   (MIRA 16:10)
 (Electric apparatus and appliances)

ACCESSION NR: AP4029215   S/0114/64/000/004/0025/0027

AUTHOR: Deych, R. S. (Engineer)

TITLE: Turbine-blade vibration in turbocompressors

SOURCE: Energomashinostroyeniye, no. 4, 1964, 25-27

TOPIC TAGS: turbine, gas turbine, turbine blade, turbine blade vibration, turbocompressor, TKR-23 turbocompressor

ABSTRACT: Experience has shown that the turbine blades of TKR-23 turbo-compressors (used for supercharging diesels) have often broken under rated operating conditions. Hence, an investigation of possible blade vibration was launched; some of its results are reported. Pressure curves were measured for three versions of the turbine body and nozzle box: (a) 12 blades in the nozzle box; most gas passes without turning; 5-mm gap; (b) 24 blades, same body; 12-mm gap; (c) 4-scroll body, 24 blades; 15-mm gap; no turn in gas flow. These conclusions are drawn: (1) Resonant stresses in the turbine blades increase with the load and supercharge pressure; (2) Aerodynamic characteristics of the gas-

Card 1/2

ACCESSION NR: AP4029215

supply ducts of the turbine and nozzle box substantially influence the disturbing forces causing blade vibration; one possible remedy is a scroll-type entrance; (3) The forces causing blade vibration are inherent to the impulse-type turbine; vibration stresses correspond to the mean values of the disturbing harmonics; (4) By proper selection of the turbine-blade natural frequencies, the most dangerous harmonic can be suppressed; (5) The gap increase tends to reduce the disturbing harmonics somewhat. Orig. art. has: 4 figures, 2 formulas, and 1 table.

ASSOCIATION: TsNIDI (Central Scientific-Research Diesel Institute)

SUBMITTED: 00   DATE ACQ: 01May64   ENCL: 00

SUB CODE: PR   NO REF SOV: 001   OTHER: 000.

Card 2/2

L 00898-66   EPA/EWT(1)/EWT(m)/EWP(w)/EWP(f)/ENG(v)/EWP(v)/T-2/EWP(k)/ETC(m)
WW/EM/GS
ACCESSION NR: AT5017701
                                            UR/0000/65/000/000/0101/0112

AUTHOR: Deych, R. S.

TITLE: Sources of vibrational disturbances in turbocompressors

SOURCE: Dvigateli vnutrennego sgoraniya (Internal combustion engines); sbornik
rabot. Moscow, Izd-vo Mashinostroyeniye, 1965, 101-112

TOPIC TAGS: turbine blade vibration, impulse turbine, turbocompressor vibration/
TKR 23 turbocompressor, TKR 14 turbocompressor, TKR 11 turbocompressor

ABSTRACT: Resonance vibrations of the blades of turbocompressors TKR-23, TKR-14,
and TKR-11 were investigated at TsNIDI. The pressure after the nozzles was recorded
on a modified type SD-726 recorder with a time constant of 0.25 sec, and the
pressure loss across the stage was measured with a special differential transducer.
The stage was motor driven against its design exhaust pressure which, for the TKR-23,
is 1.2 atm. Harmonic analysis of the results yielded the first 24 harmonics.
Thirteen different types of bodies and 12 types of blade wheels were investigated
(for example, see Fig. 1 on the Enclosure). It was found that the vibration
amplitudes increased with increasing pressure losses in the body and in the wheel
and that the orientation of the vanes on the wheel and the inlet and outlet ducting
have considerable effect on the pressure losses. Some graphs of vibration amplitude
Card 1/3

L 00898-66

ACCESSION NR: AT5017701

as a function of harmonic and pressure loss are presented for TKR-14 (for pressure losses δ_{P} = 12.4% and 6.8%) and TKR-11 (13 and 3.2%). Longer inlet ducting was found to decrease vibration amplitudes (TKR-14 amplitudes were much lower than TKR-23 at all amplitudes). Increasing the radial clearance between the body and the wheel decreased the vibration amplitudes (by 5-10% for TKR-23 as clearance was increased from 3-15 mm). It is suggested that in turbocompressor design the ducting, body, and wheel configuration should be designed together, preferably supported by scale model tests (helical air inlets were found to be the best of the tested body configurations). Since impulse turbines have a constantly changing pressure distribution at the inlet, the amplitudes of the exciting harmonics change in magnitude, but the amplitudes of the blade vibrations (and the stresses) do not depend on the peak values of the harmonics but on the average values. Thus, from a stress point of view, the equivalent of an impulse turbine is a constant pressure turbine with amplitudes of the corresponding harmonics 1.8-2.0 times smaller. Since the amplitudes of harmonics caused by the impulse flow decrease rapidly with increasing harmonics, it is always possible to stay away from the most destructive harmonics by proper blade choice. Orig. art. has: 9 figures, 1 table and 6 formulas.

ASSOCIATION: none   2½

SUBMITTED: 00

NO REF SOV: 001   ENCL: 01   SUB CODE: PR
Card 2/3   OTHER: 000

L 00898-66

a   b   c
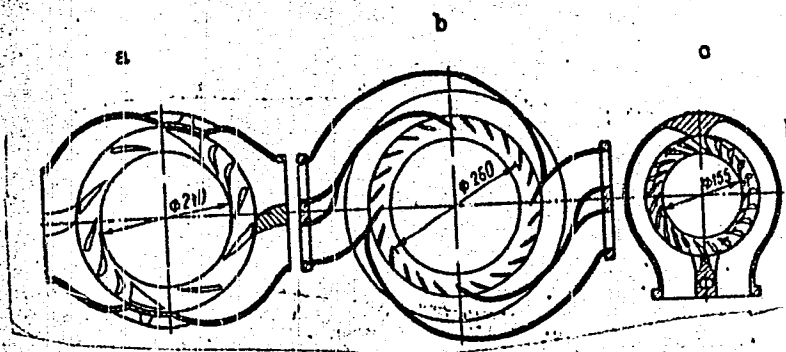
Fig. 1. Tested configurations: a, b- TKR-23; c- TKR-14

Card 3/3

L 14717-66   EWT(d)/EWT(m)/EWT(f)/T-2
ACC NR: AP6004168   (A)   SOURCE CODE: UR/0114/66/000/001/0045/0046

AUTHOR: Deych, R. S. (Engineer)

ORG: none

TITLE: Apparatus for studying the transients of an engine with a controllable
turbocompressor

SOURCE: Energomashinostroyeniye, no. 1, 1966, 45-46

TOPIC TAGS: diesel engine, turbosupercharged engine, engine test stand, clutch,
engine compressor system/ D6 engine, GT-530 hydraulic brake

ABSTRACT: Apparatus for studying the transients of a transport diesel is described.
The apparatus consists of a D6 engine, a GT-530 hydraulic brake, and a device for
quick change of the load on the engine. The brake is a double hydraulic clutch
with flat blades at an angle of 45°. The effective diameter of the rotor is 530 mm.
The clutch is regulated by filling with water, and the degree of regulation of the
brake is determined by the ratio of the specific gravities of water and air, i.e.,
~ 800. In practice, this does not exceed 20. The pressure on the blades can

Card 1/2   UDC: (621.436+621.515.5).001.5

L 14717-66
ACC NR: AP6004168

reach 4--6 kg/cm^2. The minimum loading time is a function of the power of the engine, the air pressure, and of other factors. For the D6 engine, it can be brought to 0.2--0.3 sec. Orig. art. has: 1 figure.

SUB CODE: 13/   SUBM DATE: none/   ORIG REF: 001

BVK
Card 2/2

L 14453-66   EWT(m)/EWP(f)/T/ETC(m)-6   WW/DJ
ACC NR: AP6002957   (A)   SOURCE CODE: UR/0286/65/000/024/0127/0127

INVENTOR: Deych, R. S.

ORG: none

TITLE: An adjustable guide vane assembly for radial turbines. Class 46, No. 177233
[announced by Central Scientific Research Diesel Institute (Tsentral'nyy nauchno-
iddledovatel'skiy dizel'nyy institut)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 24, 1965, 127

TOPIC TAGS: turbine, guide vane

ABSTRACT: This Author's Certificate introduces an adjustable guide vane assembly
for radial turbines. The mechanism for controlling the vanes is connected to the
vane axle. The device is designed for reducing leakage of the working fluid and for
improving the reliability of the guide vane assembly under high temperature condi-
tions. The vane axles are equipped with spring-held sealing rings on the side
facing the control mechanism, and compressed air is fed into the control mechanism
cavity.

Card 1/2   UDC: 621.438-546-225.3

L 14453-66

ACC NR: AP6002957

2
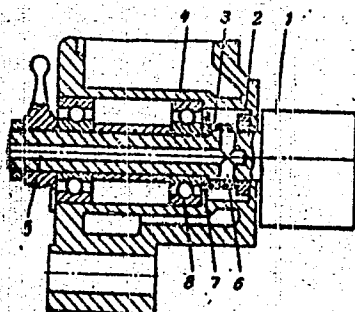
1 - rotating vane; 2 - facing ring; 3 - spring; 4 - guide vane assembly; 5 - channels; 6 - shaft of the guide vane assembly; 7 - washer; 8 - bearings.

SUB CODE: 21/   SUBM DATE: 22May63

BVK
Card 2/2

L 24438-66   EWT(d)/EWT(m)/EWP(f)/T-2   WE

ACC NR: AP6006396   (A)   SOURCE CODE: UR/0413/66/000/002/0141/0141

AUTHORS: Baykov, B. P.; Bordukov, V. T.; Deych, R. S.; Luk'yanchenko, B. S.   27
                                                                                  B

ORG: none

TITLE: Equipment for supercharging internal combustion engines. Class 46, No.
178243 /announced by Central Scientific Research Diesel Institute (Tsentral'nyy
nauchno-issledovatel'skiy dizel'nyy institut) /

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1966, 141

TOPIC TAGS: internal combustion engine component, supercharger

ABSTRACT: This Author Certificate presents equipment for supercharging internal
combustion engines, containing two turbines operating in the exhaust gases from
the engine. One turbine drives the supercharger compressor and the other drives
a blower which draws air through the engine condenser (see Fig. 1). To increase
the efficiency of the engine at partial cycles, the turbines are inserted in series
along the gas passage.

Card 1/2   UDK: 621.43.068.9—713.1 621.43.052—713.1
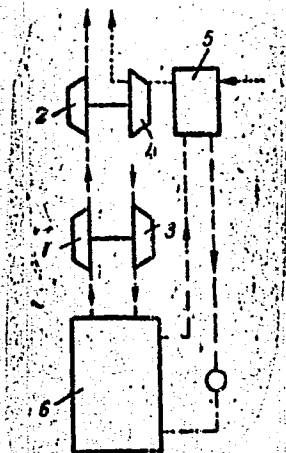
L 24438-66

ACC NR: AP6006396

Fig. 1. 1 - Gas turbine of turbocompressor; 2 - gas turbine of turboblower; 3 - supercharger compressor; 4 - blower; 5 - condenser; 6 - engine.

Orig. art. has: 1 diagram.

SUB CODE: 21/ SUBM DATE: 16Nov64

Card 2/2 dda

DEYCH, S.

The Severskiy Plant is a school of profitable work. NTO 3
no.11:48-50 N '61.   (MIRA 14:10)

1. Uchenyy sekretar' komiteta po ekonomike i organizatsii
proizvodstva Sverdlovskogo oblastnogo soveta Nauchno-tekhni-
cheskikh obshchestv.
                    (Palevskoy--Metallurgical plants)

DEYCH, T. L.

USSR/ Biology - Biochemistry

Card 1/1 : Pub. 22 - 31/49

Authors : Deych, T. L., and Soreni, E. T., Act. Memb. of Hungarian Acad. of Sc.

Title : Amino-end groups of gliadins and their change under the effect of intergeneric hybridization

Periodical : Dok. AN SSSR 98/4, 623-626, Oct. 1, 1954

Abstract : Biochemical data on the establishment of amino-end groups of certain gliadins (vegetable proteins) are presented. Fourteen references: 6-USA; 3-USSR; 3-Hungarian; 1-French and 1-German (1925-1954). Table; drawings.

Institution : Acad. of Sc. Hungary, Institute of Biochemistry, Budapest

Presented by : Academician I. A. Oparin, June 28, 1954

DEYCH, V.[Deics, V.]

Development of the knit goods industry in the Latvian S.S.R. Vestis Latv ak no.7:11-19 '61.

1. Akademiya nauk Latviyskoy SSR, Institut ekonomiki.

(Latvia—Knit goods industry)

NIKOLAYEVA, Klavdiya Yeliseyevna. Prinimala uchastiye BEYLINA, G.D.,
    starshiy laborant. DEYCH, V.S., kand.ekon.nauk, red.;
    BAZHANOVA, S., red.; PILADZE, Ye., tekhn.red.

[Practicing economy in using materials in enterprises of the
metalworking industry of the Latvian S.S.R.] Rezhim ekonomii
v ispol'zovanii materialov na predpriiatiiakh metalloobraba-
tyvaiushchei promyshlennosti Latviiskoi SSR. Pod red. V.S.
Deicha. Riga, Izd-vo Akad.nauk Latviiskoi SSR, 1960. 148 p.
                                        (MIRA 15:5)
1. Institut ekonomiki AN Latviyskoy SSR (for Beylina).
        (Latvia--Metal industries)

354/6
7?2.2.
.D5

Rezhim Ekonomii Na Predpriyatiyakh Legkoy Promyshlennosti Lativiyskoy SSR
(Economy Measures in the Light Industry of the Latvian SSR, by) V. S. Deych I
V. F. Tumshevits. Riga, Akademkniga Latviyskoy SSR, 1956.
    144 P. Graphs, Tables.
    At Head of Title: Akademiya Nauk Latviyskoy SSR. Institut Ekonomiki.

LEA

DEYCH, Vul'f Samuilovich[Deics, Vulfs], kand. ekon. nauk; TUMASHEVITS,
    Vitol'd Fritsevich [Tumasevits, Vitolds], kand. ekon. nauk;
    Primimal uchastiye TILTS, E.E., mlad. nauchnyy sotr.; DZERVE,
    P.P., kand. ekon. nauk, red.; NECHETNIY, N.F., kand. ekon.nauk,
    red.; LEVI, S., red.; BOKMAN, R., tekhn. red.

[Policy of economy in light industry enterprises of the Latvian
S.S.R.] Rezhim ekonomii na predpriiatiiakh legkoi promyshlen-
nosti Latviiskoi SSR. Riga, Izd-vo Akad. nauk Latviiskoi SSR,
1956. 144 p.   (MIRA 16:6)
                    (Latvia--Manufactures)

BEYLINA, Guta Khaimovna; DEYCH, V.S., kand. ekon. nauk, red.;
BAZHANOVA, S., red.

[Specialization and cooperation in the industry of the Latvian
S.S.R.] Spetsializatsiia i kcoperirovanie v promyshlennosti
Latviiskoi SSR. Riga, Izd-vo AN Latv. SSR, 1963. 79 p.
(MIRA 17:7)

KAPLIN, A.A.; DEYCH, Ye.S.

New methods for assembling precast reinforced concrete columns of
industrial buildings. Prom.stroi. 38 no.2:27-30 '60.

(MIRA 13:5)

1. Trest Uralstal'konstruktsiya (for Deych).
(Columns, Concrete)

D ε y c H m A N, B. S.

10(0); 18(0); 25(0)   PHASE I BOOK EXPLOITATION   SOV/2035

Ufa. Aviatsionnyy institut

Trudy, vyp. 2. (Transactions of the Ordzhonikidze Aviation Institute,
    Ufa) Nr 2. Ufa, Bashkirskoye knizhnoye izd-vo, 1956. ·219 p.
    Errata slip inserted. 1,000 copies printed.

Editorial Board: I.P. Yemelin (Resp. Ed.), A.N. Rakhmanovich, I.A.
    Bolotovskiy, S.I. Kulikov, I.A. Berezin, V.A. Vinogradov, and
    P.D. Mirko; Resp. Ed. for this number: I.A. Bolotovskiy; Ed. of
    Publishing House: M.A. Gurvich; Tech. Ed.: F.G. Gayfullin.

PURPOSE: The book is intended for engineers of scientific and in-
    dustrial institutions.

COVERAGE: This collection is composed of a number of unrelated ar-
    ticles in mechanical, aeronautical (fluid dynamics), metallurgical
    and other branches of engineering. For further coverage see
    Table of Contents.

Card 1/8

Transactions of the Ordzhonikidze (Cont.)   SOV/2035

Rakhmanovich, A.N.   Boundary Layer on the Surface of a Large
Curvature in the Longitudinal Direction   3
    This article describes results of an investigation of the
    boundary layer in nonlinear flow allowing for transversal
    pressure. The following personalities are mentioned:
    I.P. Yemelin, N.Sh. Kazykhanov, R.P. S'vetlishcheva, V.P.
    Tamkov, and V.V. Salazhnikov. There are 4 Soviet references.

Deychman, B.S.   Measuring Temperature in a High-Velocity Flow
of Gas   23
    This work is an investigation of the effect of M number on
    recovery factor   in the range of M=1.0, 1.2, 1.4, 1.6, 1.8,
    2.0 for a case of transversal flow over a cylindrical thermo-
    couple and it establishes the value of this method. It was
    found that variation of the average recovery factor as a
    function of Mach number M in case of a transversal flow over
    a thermocouple is different for subsonic and supersonic velo-
    cities. In the region of M=1.0-2.0, the measurement of tem-
    perature of the stream may be taken by a transversal thermo-
    couple with a diameter of 0.2-0.3 mm. There are 7 references:
    5 Soviet, and 2 German.
Card 2/8

Transactions of the Ordzhonikidze (Cont.)   SOV/2035

Galimkhanov, K.A. Torsion of Bars of Semicircular Cross Section   33
    This article describes solution of the problem of torsion of
    a prismatic bar having a semicircular cross section under con-
    ditions defined by Saint Venant's theory of torsion. This
    solution is presented in the form of a trogonometric series
    and allows the calculation of bars of semicircular cross sec-
    tions for strength and torsional rigidity by very simple
    formulas. There are 2 Soviet references.

Galimkhanov, K.G. Torsion Analysis of Shafts With Single Flat
Milled Recesses   45
    This article gives a solution to problems of torsion in cir-
    cular section shafts having single flat segmental recesses.
    The method applied to this solution is similar to that de-
    scribed by the author in Trudy Ufimskogo aviatsionnogo in-
    stituta, Nr 1, 1955. There are 2 Soviet references.

Kulikov, S.I. Distribution of Circumferential Stresses Between
Splines of a Splined Joint   63
    This article describes the distribution of circumferential
    stresses between the splines of a splined joint. Formulas
Card 3/8

Transactions of the Ordzhonikidze (Cont.)   SOV/2035

for the determination of transmitted circumferential stresses
of the maximum loaded pair of splines are established on the
principle that clearances between stressed splines of the
shaft and sleeve change according to a sinusoidal law. Data
obtained can be applied in designing primary splined joints
(assemblies). There are 5 Soviet references.

Mavlyutov, R.R. Efficiency of Fast-moving Belt Transmissions   75
    This article considers aspects of losses and their influence
    on efficiency of plane belt transmission. Special attention
    was given to aerodynamic losses in belts and pulleys in view
    of the considerable effect produced by them on general ef-
    ficiency of fast moving transmissions and to internal losses
    which have a decisive effect on the length of life of the
    belt. For the purposes of checking the accuracy of the ob-
    tained data experimental research was supplemented to the the-
    oretical. The following personalities working in this field
    are mentioned: Ye.M. Gut'yar, N.T. Urazbayev, V.N. Belyayev,
    B.A. Propin. There are 8 references: 7 Soviet, and 1 German.

Card 4/8

Transactions of the Ordzhonikidze (Cont.)   SOV/2035

Transactions of the Ordzhonikidze (Cont.)   SOV/2035

data on the viscosity of pure double ferrocarbon alloys and
triple alloys of iron. It also discusses determination of
viscosity of various pig irons, such as, Bessemer, open hearth
and cast irons. Personalities mentioned include: A.I. Bach-
inskiy, Professor A.M. Samarin, and L.A. Shvartsman. There
are 11 references: 7 Soviet and 4 German.

Voronov, A.L. Investigation of the Process of Machining With
Vibrating Tools   143
The article gives basic results of an investigation of the
influence of second order vibration in metal turning on the
quality and accuracy of the machined surface. There are 15
references: 14 Soviet, and 1 English.

Zinyayev, V.I. Methodology for Elaborating Technological Pro-
cesses of Aircraft Engine Assembly   155
According to the author this is the first attempt to elabo-
rate the technological processes of assembling aircraft en-
gines prior to mass production. Basic principles for develop-
ment of technological processes of assembly, recommended se-
quence of operations, and same organizational requirements
Card 6/8

Transactions of the Ordzhonikidze (Cont.)   SOV/2035

   are given. There are 6 Soviet references.

Khrizman, I.A. Graphic Method for the Determination of Volatile
and Heat-producing Properties of Brown Coal   183
   The article gives a correlational analysis of the interde-
   pendence of the incandescent mass and the exit of volatile
   products of brown coal. A method for the construction of
   individual curves, their practical significance, and a method
   for the composition of tables are given. There are 8 Soviet
   references.

Khrizman, I.A. Qualitative Paper-Chromatographic and Lumines-
cent Method of Marking Bituminous Brown coals   207
   The article describes methods for investigations of a
   large number of coals. Results are given in the form of a
   table. There are 6 Soviet references.

Berezin, I.A. Small Dimension Engine With Emulsion Fuel In-
jection   211
   This article investigated the possibility of using emulsion
   injection of fuel in small-dimension engines. Design of a
Card 7/8

Transactions of the Ordzhonikidze (Cont.)   SOV/2035

mixing pump and of a slide-valve pump is described. There
are 6 Soviet references.

AVAILABLE: Library of Congress

IS/sfm
8-17-59

Card 8/8

DEYCHMAN, B.S.; GORNETS, L.V.; TUPOLENKO, N.A.

Temperature dependence of the thermal and physical properties of
polyethylsiloxane liquids. Plast.massy no.10:25-28 '61.

(MIRA 15:1)

(Siloxanes)

S/124/62/000/011/014/017
D234/D308

AUTHORS: Deychman, B. S., Tupolenko, N. A. and Isanin, V. G.

TITLE: Experimental investigation of temperature dependence
              of heat capacity and volume expansion coefficient of
              AMГ-10ф (AMG-10f)

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 11, 1962, 107, ab-
              stract 11B752 (Dokl. k konferentsii 'Tekhn. progress
              v mashinostr.', Ufa, 1961, 51-60)

TEXT: The authors have measured the heat capacity and the volume
expansion coefficient in the liquid AMG-10f used as working liquid
in hydraulic systems. Messurements were carried out between -60
and 180°C at a constant pressure of 10 atm. The measurement tech-
nique is described in detail. The results are given in graphs and
tables. For the temperature dependence of heat capacity an inter-
polation formula $c_p = 0.42 (1 + 0.002978t)$ cal/g is obtained, which
describes the dependence well in the whole range of measurement. It

Card 1/2

Experimental investigation of ...   S/124/62/000/011/014/017
D234/D308

is pointed out that similar investigations are being carried out
for several other liquids. /¯Abstracter's note: Complete transla-
tion._7

Card 2/2

AID P - 3648

Subject   : USSR/Medicine

Card 1/1   Pub. 37 - 12/18

Author   : Deychman, E. I., Kand. Med. Sci.

Title   : On the problem of the present conditions of statistics
                 of the general sick rate of the population in the USSR

Periodical   : Gig. i. san., 10,   49-50, O 1955

Abstract   : Refers to articles on the above problem by Prof. A. M.
                 Merkov, this journal, No. 3, 1955, (See AID P - 2138)
                 and by Ye. A. Sadvokasova ("Soviet Care of Public Health,"
                 No. 2, 1955). Criticizes the present Soviet methods of
                 general sick rate statistics, and suggests a new system
                 based on the author's practical work.

Institution   : None

Submitted   : My 28, 1955

DEYCHMAN, E.I., kandidat meditsinskikh nauk

Working out a system of annual statistical cards in industrial
dispensaries. Gig. i san., 21 no.7:41-44 Jl '56.   (MLRA 9:9)

1. Iz bol'nitsy No.25 Molotovskogo rayona Moskvy.
    (MORBIDITY)
    (VITAL STATISTICS
        morbidity of indust. workers in Russia, med. records &
        statist.)
    (RECORDS, MEDICAL
        indust., for dterm. of morbidity statist. in Russia)
    (INDUSTRIAL HYGIENE
        morbidity statist. determ. by annual med. records in
        Russia)

OVCHAROV, V.K., kand.med.nauk; SHASKOL'SKAYA, N.G., kand.med.nauk;
MERKOV, A.M., prof.; DEYCHMAN, E.I., kand.med.nauk; REYNBERG,
G.A., prof.

[Manual on the use of the Soviet and international nomenclatures
of diseases and the causes of death; alphabetical index of the
names of diseases and their numbers] Posobie k pol'zovaniiu
sovetskoi i mezhdunarodnoi nomenklaturami boleznei i prichin
smerti; alfavitnyi ukazatel' naimenovanii boleznei i ikh shifrov.
Moskva, M-vo zdravookhraneniia SSSR, 1959. 446 p.   (MIRA 13:9)

1. Moscow. Institut organizatsii zdravookhraneniya i istorii
meditsiny imeni N.A.Semashko.
                 (MEDICINE--TERMINOLOGY)

DEYCHMAN, E.I., kand. med. nauk; MERKOV, A.M., prof., red.; POGOSKINA, M.V., tekhn. red.

[Health and demographic data of foreign countries] Sanitarno-demograficheskie materialy zarubezhnykh stran. Pod red. A.M. Merkova. Moskva, Medgiz. No.2. [Causes of death from 1900 to 1955] Prichiny smerti naseleniia s 1900 po 1955 g. Sost. E.I. Deichman. 1961. 55 p.   (MIRA 14:8)

1. Moscow. Institut organizatsii zdravookhraneniya i istorii meditsiny imeni N.A.Semashko.

                    (MORTALITY)

DEYCHMAN, E.I., kand.med.nauk (Moskva)

Invalidism resulting from cardiovascular diseases. Sovet. zdravo-
okhr. 5:14-19'63
                                                (MIRA 17:2)

1. Institut organizatsii zdravookhraneniya i istorii meditsiny
imeni N.A.Semashko (dir. P.I.Kal'yu).

Physicochemical analysis of systems important in analytical chemistry. III. Solubility in the system FeF₃-NaF-H₂O at 25°. I. V. Tananaev and E.N. Deichman, Zavodskaya Lab. 11, 703-7(1945); cf. C.A. 40, 1409⁹.--The soly. isotherm of the ternary system FeF₃-NaF-H₂O at 25° was studied. There are 2 solid phases in the system: FeF₃.3H₂O and 2FeF₃.5NaF. The phase 2FeF₃.5NaF is so slightly sol. in NaF soln. that it can be used for quant. sepn. of Fe from soln. and for its sepn. from metals whose fluorides are sol. The properties of the double salt were investigated by optical (immersion), thermographic, and x-ray methods. Addn. of small quantities of NaF to aq. FeF₃ soln. (in the presence of solid FeF₃.3H₂O) first increased considerably the soly. of FeF₃.3H₂O (from 5.60 to 7.32%), indicating the formation of complex ions in the soln. At NaF = 0.16%, the FeF₃.3H₂O salt was transformed into the double salt 5NaF.2FeF₃. After this, a 2nd branch of the soly. curve appeared which dropped almost vertically, resulting in the sepn. of 5NaF.2FeF₃. The intensity of this process is indicated by the fact that increasing the concn. of NaF in the soln. from 0.16 to 0.23% decreased the concn. of FeF₃ from 7.32 to 0.012% (619 times). Later the process slows down and the curve becomes asymptotic at NaF = 0.70%. Further increase in the concn. of NaF results in no changes in the system. The double salt is stable to the end of the isotherm. The salt is sol. congruently. The double salt contains no cryst. water. The salt 2FeF₃.5NaF is very slightly sol. in EtOH, insol. in Et₂O, sol. in HCl, HNO₃, and H₂SO₄; it is decompd. by strong bases and to a smaller degree by NH₄OH with the sepn. of Fe(OH)₃. Nine references.

W. R. Henn

Physicochemical analysis of systems of analytical significance. V. The system FeF_3-KF-H_2O. I. V. Tananaev and E. N. Deichman (N. S. Kurnakov Inst. Gen. Inorg. Chem. Acad. Sci. U.S.S.R., Moscow). *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1946, No. 4, 373-80; cf. *C.A.* 41, 6123x.—At 25°, addn. of smallest amts. of KF (up to 0.5 wt. %) to a soln. of FeF_3 results in some increase of the soly. of the latter, from 5.6% (at KF = 0) to 7.0%, indicating formation of complex anions. At 0.5% KF, the solid phase $3KF.FeF_3.H_2O$ (I) appears; soly. of FeF_3 drops sharply, and, from KF 3% up, not more than 0.002% FeF_3 is found in soln. The solid phase between KF 2.4 and 8.9% corresponds to the compn. 11 KF.4FeF_3.12H_2O (II), analogous to the salt 11 NaF.4AlF$_3$ (*C.A.* 38, 3542^9). Above 9% KF, and up to 33.4%, the solid phase is $3KF.FeF_3.3H_2O$ (III). The exact position of the transition II ⇌ III could not be detd. Salt I dissolves congruently, 0.018 moles/l. at 25°; the crystals have $n_γ$ < 1.46, $n_α$ 1.40. The debyogram (37 lines measured) is different from for $FeF_3.3H_2O$, II, and III. Thermography shows 3 effects, elimination of crystn. H_2O at 105-20°, decompn. into KF and FeF_3 at 680-705°, and melting of both components at 1005°. Solution of II brings about decompn. into I and KF; III, dissolving, goes over first into II, then into I and KF. Debyograms of II are characteristic only of that salt; lines of $FeF_3.3H_2O$ and of I are absent; the debyogram of III is identical with that of II, except for 3 weak addnl. lines in III. Fair-sized orthorhombic crystals could be grown only with II, giving n 1.43. Thermograms of II show dehydration at 120-70°, those of III dehydration 110-50° and decompn. into components at 785-820°.   N. T.

Volumetric determination of aluminum. N. I. Chervya-
kov and E. N. Yelchman. Zavodskaya Lab. 4, 548-10
(1935). The detn. of Al in bauxite by the method of
Hanus and Quadrat (C. 1. 4. 298) gave excellent results.
Chas. Blanc

ASM SLA   METALLURGICAL LITERATURE CLASSIFICATION

DEYCHMAN, Eleonora Nikolayevna

Determination of small amounts of nickel and cobalt in iron ores. E. N. Deichman. *J. Applied Chem.* (U. S. S. R.) 8, 1090-0(1935).—The ore is treated with 20-40 ml. of aqua regia, the soln. is dild. and filtered, 3-8 g. of NH₄Cl is added to the filtrate + washings, and the whole is heated to the b. p. and Fe pptd. therefrom by aq. NH₃. The suspension of Fe(OH)₃ is filtered off, and the residue is twice redissolved in HCl and repptd. The combined filtrate are concd. to 250 ml., and Ni is detd. colorimetrically [dimethylglyoxime (I)] in 5 ml. A similar procedure is followed for Co, except that the concd. filtrates are made alk. with aq. NH₃, 1 ml. of aq. 1% I is added to ppt. Ni, excess of I in the filtrate + washings, is destroyed by boiling with 4-5 ml. of aq. HClO₄, the cooled soln. is made neutral with aq. NH₃, and then dild. to a definite vol., and the coloration given by 20 ml. with 2 ml. of K tartrate and excess of 1 nitroso β-naphthol is compared with that of a series of standards.

B. C. A

ASM SEA   METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND CODERS

3RD AND 4TH CODERS

PROCESSES AND PROPERTIES INDEX

7

A new method for the separation of small quantities of zinc, nickel, cobalt, manganese, cadmium, copper, and titanium from large quantities of iron. I. V. Tananaev and E. N. Deichman. Zavodskaya Lab. 12, 30-7(1946).— The new method proposed for the sepn. of small quantities of Zn, Co, Ni, Mn, Cd, Cu, and Ti from large quantities of Fe is based on the formation of double salts: $5 NaF.2FeF_3$ or $2KF.FeF_3.H_2O$ and $11 KF.4FeF_3.12H_2O$. The completeness of the sepn. depends on the acidity of the soln. (1-3 ml. of concd. HCl or H_2SO_4 in 100 ml. of soln.). The ppt. of the double fluoride of Fe is cryst., has a small vol., and filters well from hot soln. The method is superior to older methods, based on hydrolytic pptn. of Fe. The soln. is dild. to 100 ml., acidified with HCl or H_2SO_4, heated to boiling, small portions of 30% KF (or solid NaF) are added slowly (the intensively colored orange soln. decolorizes, owing to the formation of the undissocd. FeF_3, and a white ppt. of the double fluoride is formed). The ppt. can be filtered after several min. with a suitable wash liquid, and the desired element detd. in the filtrate. The optimum acidity in detns. of Zn (relative content 1%) was 0.5-1.0 ml. of HCl in 100 ml. The ppt. absorbs more Zn when the detn. is carried out in the cold. No Ni or Co was formed in the ppt. when proper exptl. conditions were followed. Satisfactory results were obtained in detns. of Ni in the filtrate. Mn was detd. in the filtrate colorimetrically. Addn. of 3 ml. of H_2SO_4 reduced considerably the Mn content in the ppt.

and it could be sepd. completely from Fe by repptn. with H_3BO_3. The optimum acidity in sepn. of Cd was approx. 0.5 wt. % of HCl. Better results were obtained with NaF than with KF. The sepn. of Cu was most complete with an acidity of approx. 1 ml. of H_2SO_4 in 100 ml. of soln. The sepn. with NaF was quant. Sepn. of Ti with KF was more difficult than that of the other elements. With NaF nearly satisfactory results were obtained at an acidity of 3 ml. of H_2SO_4 per 100 ml. of soln. A double pptn. of Fe yielded a complete sepn. of Ti. 3 references.
— W. R. Henn

ASM-SLA   METALLURGICAL LITERATURE CLASSIFICATION

USSR/Chemistry - Systems
    Chemistry - Iron compounds

Sep 1946

"Physico-chemical Analysis of Systems of an Analytical Significance: VI, On the Solubility
(25°) in the System FeF$_3$ - H$_2$O," I. V. Tananayev, E. N. Deichman, 11 pp

"Zhur Prik Khim" Vol XIX, No 4

Elaboration of a method of synthesis of FeF$_3$ - 3H$_2$O and data on the optical,
roentgenographical and thermographical investigations of this salt.

P. 1341

    Mbr., Analytical Lab., Phys.-Chem. Analysis Section, Inst. General &
    Inorganic Chem. im. N. S. Kurnakov, Dept. Chem. Scu., Acad. Sci., -c1946-51-.

DEYCHMAN, E. N.

USSR/Chemistry - Beryllium Fluoride
    Chemistry - Solubility   Mar/Apr 49

"Some Properties of Beryllium Fluoride in Solutions, Part II," I. V.
Tananayev, E. N. Deychman, Inst of Gen and Inorg Chem imeni N. S. Kernakov,
Acad Sci USSR, $7\frac{1}{2}$ pp

"Iz Ak Nauk SSSR, Otdel Khim Nauk" No 2, pp. 44-51.

Finds by a study of the solubility of CaF_2, $PbFCl$, and LiF in solutions
of $Be(NO_3)_2$, with concentrations from 0.001 — 1 mol/l, that quantity
dissolving is large enough to be explained by formation of slightly
dissociated products of the combination of beryllium and fluorine ions.
Shows by calculations that stable slightly dissociated products are:
ion BeF^+($K_{BeF^+} = 5.10^{-5}$) and BeF_2 ($K_{BeF_2} = 0.01$). Concludes that
complex ions BeF_3 and BeF_4 are very unstable. Submitted 28 Jun 48.

PA 43/49T12

DEYCHMAN, YE. N.

USSR/Chemistry - Beryllium-Fluorine   Jan/Feb 51
                     Compounds

"Certain Properties of Solutions of Beryllium Fluo-
ride, Report 3," I. V. Tananayev, E. N. Deychman,
Inst Gen and Inorg Chem imeni N. S. Kurnakov, Acad
Sci USSR

"Iz Ak Nauk SSSR, Otdel Khim Nauk" No 1, pp 26-31

Study of system BeF_2--$Be(NO_3)_2$--H_2O by methods of mea-
suring viscosity, sp gr, and cryoscopy proved exist-
ence in soln of monofluoroberyllium ion of greater
stability than all remaining fluoroberyllates in
soln.

LC   174T6

DEYCHMAN, Ye. N.

Indium fluorides. E. N. Deichman and I. V. Tananaev. Khim. Redkikh Elementov, Akad. Nauk S.S.S.R., Inst. Obshchei i Neorg. Khim. im. N. S. Kurnakova 1, 95-101 (1954).—Soln. of 30 g. In in 100 g. pure 40% HF with gentle heating in the presence of H_2O_2, followed by destruction of excess H_2O_2, concn., washing of the ppt. with 50% EtOH and air-drying 2-3 days gave colorless $InF_3.3H_2O$, tetragonal prisms, n_p 1.450, n_a 1.427, sol. in H_2O (5.8% at 25°), sol. in HCl and HNO_3, less sol. in H_2SO_4; reacts with NaOH but gives no ppt. with $CaCl_2$. The x-ray diagram is given. On heating, the salt shows endothermic effects at 140-60° and 450°; the 1st corresponds to loss of $4H_2O$ and 2HF; the 2nd to loss of H_2O and HF to form $In_2P_2O_7$. In the system InF_3-NaF-H_2 at 25°, below 0.15% NaF supersatd. solns. are formed; $InF_3.3H_2O$ is the solid phase. At 0.15% NaF and 9.89% InF_3 there are formed InF_3 and $3NaF.InF_3$; at NaF concns. up to 2.5, the solid phase is $3NaF.InF_3$, somewhat sol. in EtOH, sol. in HCl, HNO_3, and H_2O, yielding a ppt. with $CaCl_2$. Its x-ray diagram differs considerably from that of NaF or $InF_3.3H_2O$. $3NaF.InF_3$ shows endothermic effects at 720, 800, and 870°, possibly caused by partial loss of F; the complex melts above 1000°.
                                G. M. Kosolapoff

DEYCHMAN, E. N. and TANANAYEV, I. V.

"On indium ferrocyanides", Khimiya Redkikh Elementov, No. 2, p 37, 1955.

The Systems: $InCl_3$ - $Li_4Fe(CN)6-H_2O$; $InCl_3-Na_4Fe(CN)6-H_2O$ and $INCl_3-K_4Fe$ (CN) $6-H_2O$ were investigated using solubility, electroconductivity, potentiometric and turgidometric methods. Concentrations of components were those used under normal analytical conditions. It was found that in the first two systems indium ions react forming slats of the normal composition $In_4 /\overline{}Fe(CN)6\underline{}/3$ and in the third system, in addition to the normal, a double salt is formed under certain conditions.

SO: D-413171

DEYCHMAN, E.N.; TANANAYEV, I.V.

Study of the reaction of indium hydroxide formation. Khim;redk.
elem. no.3:73-86 '57.   (MLRA 10:8)

1. Institut obshchey i neorganicheskoy khimii im. N.S. Kurnakova
Akademii nauk SSSR.
                        (Indium hydroxides)

62-58-3-1/30

AUTHOR: Deychman, E. N.

TITLE: The Investigation of the Properties of Indium Hydroxide and
            the Separation of Indium From Zinc (Izucheniye svoystv
            gidrookisi indiya i otdeleniye indiya ot tsinka)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Khimicheskikh Nauk,
            1958, Nr 3, pp. 257 - 265 (USSR)

ABSTRACT: From published data it is known that for the solution of
            the hydroxides of beryllium, indium, aluminum, gallium, lead,
            chromium, molybdenum and other elements a considerable ex-
            cess of alkali- which surpasses the stoichiometric one - is
            needed. The first indication on the solubility of indium
            hydroxide is contained in the papers by Winkler (Reference 2).
            Later Rents mentioned the observed formation of salts in
            indic acid which he called indates. Lacroix also indicates
            the formation of such indates; this formation takes place
            in a highly alkaline medium. Ivanov-Emin and Ostroumov syn-
            thesized hydroxy-indates from a boiling 60 % caustic soda
Card 1/3   solution. The composition of the separated compound correspond-

The Investigation of the Properties of Indium Hydroxide and the Separation
of Indium From Zinc

ed to the formula $Na_3[In(OH)_6] \cdot 2H_2O$. Under the influence
of a small quantity of water a rapid decomposition of this
compound at the simultaneous formation of sodium and indium
hydroxides takes place. The purpose of the present paper
consisted in the exact determination of the nature of the
chemical interaction between indium hydroxide and variously
strong NaOH-solutions. The obtained experimental material
indicates the absence of (soluble and insoluble) stable in-
dates. This observation could even be made in concentrated
NaOH-solution. For this see figures 12 - 15. By means of a
crystal-optical and radiographic analysis the individual
peculiarity of the basic salts of indium was confirmed, as
well as the identity of the precipitates of the hydroxides
of indium independent from the alkaline concentration. Furth-
ermore a thermographic analysis of the basic salts and the
hydroxide of indium was performed. The solubility in the
systems $ZnSO_4$-NaOH-H_2O; $ZnCl_2$-NaOH-H_2O; $In_2(SO_4)_3$-$ZnSO_4$-
-NaOH-H_2O; $InCl_3$-$ZnCl_2$-NaOH-H_2O was investigated and the

Card 2/3   optimum conditions of the separation of indium and zinc in

62-58-3-1/30

The Investigation of the Properties of Indium Hydroxide and the Separation
of Indium From Zinc

the hydroxide-form were determined. There are 15 figures,
4 tables, and 10 references, 8 of which are Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S.
Kurnakova Akademii nauk SSSR)
(Institute for General and Inorganic Chemistry imeni
N. S. Kurnakov, AS USSR)

SUBMITTED: February 3, 1957

Card 3/3

AUTHOR: Daychman, E.N.   SOV/ 78-3-7-21/44

TITLE: I. Investigation of Indium Oxalates (I. Izucheniye oksalatov indiya)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol. 3, Nr 7, pp 1592-1598 (USSR)

ABSTRACT: Investigations of the system $InCl_3$ - $(NH_4)_2C_2O_4$ - H_2O (by de-
            termining solubility) of electric conductivity and of the absorp-
            tion spectrum were carried out. It was found that indium chloride
            reacts with ammonium oxalate and that reaction takes place in
            two stages. During the first stage the compound $InOH.C_2O_4.H_2O$
            and during the second the complex compound $NH_4\left[In(C_2O_4)_2\right].H_2O$ is
            formed.
            With an increased concentration of ammonium oxalate the solubil-
            ity of indium oxalate increases, and at a ratio of
            $(NH_4)_2C_2O_4 : InCl_3 = 6 : 0$ indium oxalate is fully soluble. The
            solubility of $NH_4\left[In(C_2O_4)_2\right]$ amounts to 3.10^{-3} mol/l.
            Investigations of the absorption spectrum gave no satisfactory
Card 1/3   results because precipitation forms very quickly. Crystallooptical

I. Investigation of Indium Oxalates   SOV/ 78-3-7-21/44

analyses showed that $InOH.C_2O_4.H_2O$ is a "Splittation" and that the oxystals of $NH_4[In(C_2O_4)_2]$ are of rhombic shape with $Ng = 1.534$ and $N_p = 1.492$. Radiographical analyses of the solid phases and electric conductivity confirm the existence of the two above mentioned compounds. Thermographical analyses showed that the thermal decomposition of $InOH.C_2O_4.H_2O$ takes place in three stages: at 100-240°C water is separated, at 320°C indium oxy oxalate, and at 440-470°C In_2O_3 is formed. On the thermogram of $NH_4[In(C_2O_4)_2]$ four effects were determined: at 200°C there is a loss of water, at 290°C partial decomposition of oxalate accompanied by the forming of indium oxy oxide, and at 380-650°C complete decomposition and forming of In_2O_3. There are 7 figures, 3 tables, and 4 references, 0 of which are Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova
                Akademii nauk SSSR (Institute of General and Inorganic Chemistry
                imeni N.S.Kurnakov, AS USSR)

SUBMITTED: June 22, 1957

Card 2/3

I. Investigation of Indium Oxalates   SOV/ 78-3-7-21/44

     1. Indium oxalate--Chemical reactions 2. Ammonium oxalate
     --Chemical reactions   3. Spectrographic analysis--Applications

Card 3/3

AUTHORS: Deychman, E. N., Tananayev, I. V.   75-13-2-7/27

TITLE: Determination of Small Quantitites of Indium by Titrime-
                tric and Photometric Methods (Opredeleniye malykh koli-
                chestv indiya titrimetricheskim i fotometricheskim meto-
                dom)

PERIODICAL: Zhurnal Analiticheskoy Khimii, 1958, Vol. 13, Nr 2,
                pp. 196-2oo (USSR)

ABSTRACT: One of the best known titrimetric methods for the determi-
                nation of indium is based upon the potentiometric titration
                by means of potassium ferrocyanide (Ref. 1). The composition
                $KIn_5\left[Fe(CN)_6\right]$ is ascribed to the compound formed here. Kol'-
                tgof (Ref. 2) says, however, that the composition of the
                precipitating deposit was not yet investigated. In the in-
                vestigation of the systems of indium chloride and of the
                ferrocyanides of the alkaline metals (Refs. 3,4) it was
                found that the following order applies for the tendency
                to form mixed ferrocyanides with indium difficult to be
                solved: Li〈Na〈K〈Rb〈Cs. On the strength of the investiga-
Card 1/4   tion of the authors it is very probable that the inaccu-

Determination of Small Quantities of Indium by   75-13-2-7/27
Titrimetric and Photometric Methods

racy of the mentioned potentiometric method is due to the
variable composition of the formed precipitation, since in
the case of a ratio of $K_4[Fe(CN)_6]$: $InCl_3 = 0.75$ in the ini=
tial mixture a normal ferrocyanide of indium precipitates
which then continues to react with $K_4[Fe(CN)_6]$ under for=
mation of the mixed salt $KIn[Fe(CN)_6]$. In consequence of
this reaction the modification of the potential is not ob=
vious enough. A uniform compound of a certain composition
is formed only in the reaction of indium ions with the
ferrocyanides of lithium and sodium. The point of equiva=
lence in the potentiometric titration lies in this case
at a ratio of the components which corresponds to the
formation of $In_4[Fe(CN)_6]$. Hence follows that the analy=
tical determination of indium the ferrocyanides of li=
thium and sodium are to be preferred to the ferrocyani=
des of potassium, rubidium, and cesium. A method for the
determination of indium by means of potentiometric titra=
Card 2/4   tion with sodium ferrocyanide was worked out. Diphenylamine

Determination of Small Quantities of Indium by   75-13-2-7/27
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was used here as indicator. Diphenylamine is oxydized in
acid solutions under the influence of oxydizing agents to
colorless phenyl benzidine and then to violet diphenyl=
benzidine (Ref. 5). In to a great extent acid solutions
a part of the diphenylbenzidine can be oxidized, before
all diphenylamine is transformed into diphenylbenzidine.
It was found that sulphuric acid is best suited for the
titration of indium. In a solution of 5% of H_2SO_4 a
stable and sufficiently intensive coloration is formed
after 2 - 3 minutes. The best results were obtained in
a concentration of 0,02-0,005 g indium in a solution of
5o ml. Small quantities of chlorides and sulfates do not
disturb the determination, the coloration of the indica=
tor is, however, formed much more slowly. Oxalic acid
reduces to a small extent the coloration, phosphoric
acid disturbs. Disturbing cations are chromium, tungsten,
copper and great quantities of iron. In presence of
diphenylamine also zinc, cobalt, aluminum and tin show
colorations, the disturbing influence of these elements

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Determination of Small Quantities of Indium by   75-13-2-7/27
Titrimetric and Photometric Methods

can, however, be eliminated by addition of citric acid.
Furthermore the authors worked out also a photometric
method of determining small quantities of indium. In the
case of adding a solution of potassium ferricyanide and
diphenylamine to a diluted solution of an indium salt a
coloration is produced the intensity of which is propor-
tional to the concentration of indium. A solution of sul-
furic acid of 5% is best suited as medium. The smallest
quantity of indium which can be determined this way amounts
to 4.10^{-5} g in a solution of 25 ml. Be, Ca, Mg, La, Cd, Ga,
Ti, U, Th, Al, Co, Ni, Zn and Mn do not disturb the de-
termination. In presence of zinc the coloration is produced
sooner and to a greater degree. it corresponds, however,
after 1o minutes to the normal coloration of the solution
without foreign ions. Cr, Ni, Cu, Fe and Tl disturb.
There are 7 tables and 5 references, 3 of which are Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kur-
nakova AN SSSR, Moskva (Moscow Institute of General and
Inorganic Chemistry imeni N.S. Kurnakov, AS USSR)

SUBMITTED: December 29, 1956 1. Indium--Determination   2. Indium--Volumetric
analysis   3. Photometry   4. Diphenylamine--Applications

Card 4/4

5(2)

AUTHOR: Deychman, E. N.

TITLE: Investigation of the Oxalates of Indium

ABSTRACT: In an earlier paper (Ref 1) the author investigated the reaction between indium chloride and ammonium oxalate. The present paper continues this series by using potassium- and cesium oxalate and summarizes the results of both works. Solubility, electric conductivity and pH were measured. The results are given in table 1(K-compounds) and table 2(Cs-compounds) and graphed in figures 1-6. Figures 7-11 show the thermograms of the complex compounds and initial substances. The solubility in the systems $InCl_3 - M_2C_2O_4 - H_2O$ (M= NH_4, K, Cs) reveals many similarities. Two compounds are formed: at first with low concentration of $M_2C_2O_4$ the basic oxalate $In(OH)C_2O_4$, then, with higher concentration of the alkali oxalate the insoluble complex salt $M[In(C_2O_4)_2]$. In the system with potassium oxalate the basic salt only occurs in a narrow range of concentration. A further increase of the oxalate concentration yields the formation of

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Investigation of the Oxalates of Indium   SOV/78-4-10-29/40

complex anions $\left[In(C_2O_4)_3\right]^{3-}$ which cannot be separated in solid form. The complex compounds were investigated with respect to the optical properties of the crystals, by X-ray analysis (carried out by T. S. Khodasheva) and thermographically. The results prove the possibility of separating indium from other elements by means of an adequate concentration of the alkali oxalate or of determining it quantitatively by measuring the pH-jump at the moment of the formation of the insoluble complex salt. There are 11 figures, 2 tables, and 3 references, 2 of which are Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov of the Academy of Sciences, USSR)

SUBMITTED: June 21, 1958

Card 2/2

5(2)

AUTHOR: Deychman, E. N.

05886

SOV/78-4-11-39/50

TITLE: Investigation of the System $InCl_3$ - $H_2C_2O_4$ - H_2O

ABSTRACT: Previous papers (Refs 1, 2) investigated systems of indium salts and oxalates of ammonium, potassium and cesium. The present paper deals with the influence of the hydrogen ion concentration on the formation and stability of indium oxalates. A short survey of publications dealing with the same subject is given (Refs 4-7). The author reports on the measurement of the hydrogen ion concentration and the electric conductivity of the system $InCl_3$ - $H_2C_2O_4$ - H_2O at 25° for concentrations of oxalic acid from 0.005 mol/l up to saturation. Table 1 and figure 1 show that only one compound - normal indium oxalate - is formed. The purely prepared compound corresponded to the formula $In_2(C_2O_4)_3 \cdot nH_2O$, the content of crystal water varying between 2 and 8 molecules H_2O according to the age of the sample. The solubility of indium oxalate in H_2O is $5 \cdot 10^{-4}$ mol/l, in oxalic acid $1 \cdot 10^{-3}$ mol/l.

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Investigation of the System $InCl_3$ - $H_2C_2O_4$ - H_2O

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SOV/78-4-11-39/50

The composition of the solid phase remains unchanged. The measurement of the hydrogen ion concentration (Fig 2) and of the specific electric conductivity (Fig 3) confirmed the formation of indium oxalate the crystal-optical analysis of which yielded rhombs with the parameters N_g - 1.684, N_p - 1.490. Four effects of thermal decomposition of indium oxalate were detected by thermographic analysis (Fig 4): release of the crystal water, and gradual decomposition with the release of CO and CO_2. The X-ray analysis carried out by T. S. Khodasheva for $In(C_2O_4)_3$ yielded an X-ray picture that distinctly characterizes this salt. The coordination number of In in most oxalates was equal to 4. The thermographic data, however, point to a different bond of the water, and to the penetration of 2 water molecules into the inner sphere which would correspond to the coordination number 6. This problem can only be solved by further X-ray investigations. The author thanks I. V. Tananayev for the attention paid to the paper. There are 5 figures, 2 tables, and 7 references, 3 of which are Soviet.

SUBMITTED: June 10, 1958

Card 2/2

ROTKOVA, S.V., starshiy bibliograf; METSATUN'YAN, I.A., bibliograf;
TANANAYEV, I.V., akademik, otv.red.; TRONEV, V.G., doktor khim.
nauk, nauchnyy red.; SPIVAKOVA, E.M., red.; PEREL'MAN, F.M.,
doktor khim.nauk, nauchnyy red.; SPERANSKAYA, Ye.I., kand.khim.
nauk, nauchnyy red.; DEYCHMAN, E.N., kand.khim.nauk, nauchnyy red.;
BASHILOVA, N.I., mladshiy nauchn.sotrudnik, nauchnyy red.; BOL'SHA-
KOVA, N.K., mladshiy nauchn.sotrudnik, nauchnyy red.; KASHINA, R.S.,
tekhn.red.

[Chemistry of rare elements; bibliographic index of Soviet and
foreign literature] Khimiia redkikh elementov; bibliograficheskii
ukazatel' otechestvennoi i zarubezhnoi literatury. Moskva, Izd-vo
Akad.nauk SSSR. No.1. (1951-1954). 1960. 418 p.
                                                    (MIRA 13:11)
1. Biblioteka Otdeleniya khimicheskikh nauk AN SSSR (for Rotkova).
2. Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova
(for Tronov, Perel'man, Speranskaya, Deychman, Bashilova, Bol'shakova).
        (Bibliography--Metals, Rare and minor)

24732
S/078/6./006/007/009/014
B121/B207

§ 2200

AUTHOR: Deychman, E. N.

TITLE: Study of indium sulfates

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 6, no. 7, 1961,
              1671 - 1676

TEXT: The reaction of indium sulfate with potassium sulfate was studied
by determining the viscosity and the specific gravity, by potentiometric
and cryoscopic examinations and measurement of the electrical conductivity.
Indium sulfate was precipitated from a sulfuric acid solution and the
sulfuric acid excess washed out by ethyl alcohol. The compound produced
has the following composition: $In_2(SO_4)_3 \cdot 5H_2O$; it is a white, crystalline
powder which is readily soluble in water. The thermogram recorded of the
synthesized indium sulfate is characterized by four endothermic effects
occurring at temperatures of 110, 250, 670 and $900^\circ C$. Dehydration occurs
at $110^\circ C$ under separation of 4.5 molecules water. The unhydrous indium

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3/018/61/006/007/009/014
B121/B207

Study of indium sulfates

sulfate which is stable up to 900°C forms at 270°C. The temperature

effect at 670°C shows the polymorphic transformation of $In_2(SO_4)_3$. A

method of producing indium sulfate from metallic indium was described:

Metallic indium in the form of chips is dissolved in a sulfuric acid

excess (1 : 1) at a ratio of SO_4^{2-} : In^{3+} = 2 : 1. The reaction product

is evaporated almost until dry and, subsequently, thermally treated at

400 - 500°C. The analysis of this compound corresponds to the composition

of $In_2(SO_4)_3$. The solubility of indium sulfate in water at 20°C amounts

to 53.92 %. The dehydrated indium sulfate is extremely hygroscopic and

absorbs up to 5 molecules water in the air. The crystal optic character-

istics of $In_2(SO_4)_3 \cdot 5H_2O$ are the following: Ng = 1.53, Np = 1.48. The

existence of complex anions in the form of $[In(SO_4)_2]'$ was detected in the

system $In_2(SO_4)_3$ - K_2SO_4 - H_2O and in the form of $[In(SO_4)_3]^{3-}$ in the

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S/078/61/006/007/009/014
B121/B207

Study of indium sulfates

solution by determining the viscosity and the specific gravity, cryoscopic
tests and determination of the electrical conductivity. There are 4 figures,
2 tables, and 7 references: 3 Soviet-bloc and 4 non-Soviet-bloc.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S.
                  Kurnakova Akademii nauk SSSR (Institute of General and
                  Inorganic Chemistry imeni N. S. Kurnakov, AS USSR)

SUBMITTED: June 3, 1960

Card 3/3

5 2620

AUTHOR: Deychman, E. N.

TITLE: Study of the reaction of indium sulfate solutions with
            lithium and cesium sulfates

PERIODICAL: Zhurnal neorganicheskcy khimii, v. 6, no. 7, 1961,
            1677 - 1680

TEXT: The existence of complex compounds in the solution was studied in
the systems $In_2(SO_4)_3 - Li_2SO_4 - H_2O$ and $In_2(SO_4)_3 - CsSO_4 - H_2O$ by
determining the viscosity and the specific gravity, the electrical conduct-
ivity, as well as cryoscopic examinations. The reaction of indium sulfate
with lithium sulfate proceeds according to the following equation:
$In_2(SO_4)_3 + Li_2SO_4 \longrightarrow 2 Li[In(SO_4)_2]$.
At a component ratio of $Li_2SO_4 : In_2(SO_4)_3 \sim 1 : 1$, a clear break appears
on the curves of viscosity, the specific gravity, cryoscopic measurements
and the electrical conductivity. The reaction of indium sulfate with cesium
sulfate proceeds according to the following equations:
Card 1/2
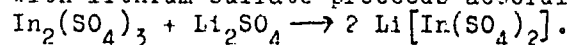
24733

Study of the reaction of...

S/078/61/006/007/010/014
B121/B207

$In_2(SO_4)_3 + Cs_2SO_4 \longrightarrow 2 Cs[In(SO_4)_2]$ and
$Cs[In(SO_4)_2] + Cs_2SO_4 \longrightarrow Cs_3[In(SO_4)_2]$.
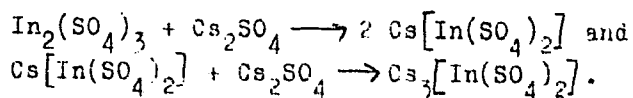
In the presence of sulfate ions the complex $[In(SO_4)_2]'$, forms in the indium sulfate solution, at a greater sulfate ion excess, the complex $[In(SO_4)_3]^{3-}$ develops which is more dissociable than the former. The ion radius of the outer sphere cation does not affect the composition of the indium anion complexes formed. There are 3 figures, 2 tables, and 4 references: 3 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov, AS USSR)

SUBMITTED: June 3, 1960

Card 2/2

$S/078/61/006/008/006/018$
$B121/B203$

$S.2200$

25507

AUTHOR: Deychman, E. N.

TITLE: Study of solubilities (20°C) in the system $In_2(SO_4)_3$ $-Cs_2SO_4-H_2O$

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 6, no. 8, 1961, 1831-1836

TEXT: The author studied the solubility in the system $In_2(SO_4)_3-Cs_2SO_4$ $-H_2O$ at 20°C and determined the following compounds: $CsIn(SO_4)_2 \cdot 12H_2O$, $CsIn(OH)(SO_4)_2 \cdot 2H_2O$, and $Cs_3In(OH)_2(SO_4)_2nH_2O$. These compounds form by complex formation, hydrolysis, and salting out. All compounds produced are soluble in acids. At a concentration of 0.01 - 30 % Cs_2SO_4, the solid phase $CsIn(SO_4)_2 \cdot 12H_2O$ forms, at 30 - 58 % Cs_2SO_4, the compound $Cs_2In(OH)(SO_4)_2 \cdot 2H_2O$, and above 60 % Cs_2SO_4, the compound $Cs_3In(OH)_2(SO_4)_2$ $\cdot nH_2O$. The author studied the thermal decomposition of $CsIn(SO_4)_2 \cdot 12H_2O$ by plotting the heating curve with a Kurnakov pyrometer, and determined

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Study of solubilities...   25507   S/078/61/006/008/006/018
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six endothermic effects on the thermogram, at 90, 110, 250, 690, 850, and 940°C. This thermal decomposition ix expressed by the following equations:

$$CsIn(SO_4)_2 12H_2O \longrightarrow CsIn(SO_4)_2 \cdot 5H_2O + 7 H_2O \quad (90.0°)$$

$$CsIn(SO_4)_2 \cdot 5H_2O \longrightarrow CsIn(SO_4)_2 \cdot 2H_2O + 3 H_2O \quad (110°)$$

$$CsIn(SO_4)_2 \cdot 2H_2O \longrightarrow CsIn(SO_4)_2 + 2 H_2O \quad (250°)$$

$$CsIn(SO_4)_2 \longrightarrow CsInOSO_4 + SO_3 \quad (850°)$$

$$CsInOSO_4 \longrightarrow CsInO_n(SO_4)_m + x SO_3 \quad (>850°).$$

Three effects, at 100, 250, and 700°C, were found on the thermogram for compound $Cs_2In(OH)(SO_4) \cdot 2H_2O$; the end product of thermal decomposition is indium oxysulfate. The optical studies of $CsIn(SO_4)_2 \cdot 12H_2O$ were conducted by T. N. Chodashchewoy; crystals were found to precipitate as octahedrons with cubic syngony. There are 4 figures, 1 table, and 6 references: 3 Soviet-bloc and 3 non-Soviet-bloc.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im N. S. Kurnakova
Akademii nauk SSSR (Institute of General and Inorganic
Chemistry imeni N. S. Kurnakov of the Academy of Sciences USSR)

Card 2/3

DEYCHMAN, E.N.; RODICHEVA, G.V.

Interaction between indium sulfates and rubidium sulfates in
aqueous solution. Zhur.neorg.khim. 6 no.9:2180-2186 S '61.
(MIRA 14:9)

1. Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova
Akademii nauk SSSR.
(Indium sulfate) (Rubidium sulfate)

34625
S/186/62/004/001/004/008
E075/E436

21.4100

AUTHORS: Deychman, E.N., Tananayev, I.V.

TITLE: Study of plutonium fluorides

PERIODICAL: Radiokhimiya, v.4, no.1, 1962, 66-73

TEXT: The authors investigated plutonium fluoride in view of its interesting chemical properties and, in particular, its solubility in the system $PuF_4-NaF-H_2O$. The separation of a double fluoride of Pu and Na from this system could be expected as for the salts of Pu and K, which would serve as means of precipitation of Pu from the solution. Investigation of the solubility of PuF_4 in NaF solutions was carried out and a solubility diagram constructed consisting of three parts. The first part, up to 0.15% of NaF in solution, corresponds to PuF_4. From 0.15% NaF onwards there is formation of $NaPuF_5$. Confirmation of the identity of this compound came from its solubility curve with the unchanged composition of the solid phase. Solubility of $NaPuF_5$ reaches the minimum concentration 3×10^{-5}% of Pu. The composition of the compound was established by chemical and optical analysis. The results obtained indicate that the reaction of the complex

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Study of plutonium fluorides   S/186/62/004/001/004/008
                                            E075/E436

formation proceeds as follows: PuF_4 + NaF $\longrightarrow$ $NaPuF_5$. The third
part of the diagram, from 0.56% of NaF to 3.5%, corresponds to a
coordination saturated compound, the composition of which is
Na_2PuF_6. Optical investigations confirmed the identity of the
separated compounds. Both of the double salts are scarcely
soluble in the NaF solutions. The authors prove, on the basis of
the results obtained, that the solubilities of double salts of Pu
and NaF are not greater than those of the double salts of Pu and
K, contrary to previous statements. Considering the convenient
practical properties of $NaF-PuF_4$ precipitates, their crystallinity
and small volume, and also negligible solubility of Pu in the
presence of NaF, the authors conclude that the formation of the
double salts can be utilized in analytical practice. There are
7 figures and 3 tables.

SUBMITTED: December 20, 1960

Card 2/3

AUTHORS: Deychman, E. N., Rodicheva, G. V., Britsyna, Zh. A.

TITLE: Study of indium sulfates. The system $In_2(SO_4)_3 - H_2SO_4 - H_2O$

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 4, 1962, 877-884

TEXT: The compounds forming in the system $In_2(SO_4)_3 - H_2SO_4 - H_2O$ were studied by measuring the specific electrical conductivity, pH value, and solubility. The measurement of electrical conductivity was made in solutions with constant concentration of $In_2(SO_4)_3$ and varying quantities of sulfuric acid, as well as in an isomolar series. The following results were obtained: The acid salt $In_2(SO_4)_3 \cdot H_2SO_4$ or $InH(SO_4)_2$, which can also be considered as complex acid $H[In(SO_4)_2]$, is formed in solution and in the solid phase (in solution, the two forms are in dynamical equilibrium). Both forms are little stable, and dissociate in the solution according to: $H[In(SO_4)_2] \rightleftarrows H^+ + [In(SO_4)_2]^-$; $[In(SO_4)_2]^- \rightleftarrows [InSO_4]^+ + SO_4^{2-}$;

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Study of indium sulfates. ...

$InH(SO_4)_2 \rightleftharpoons In^{3+} + H^+ + SO_4^{2-}$, respectively. In the presence of sulfate ions, no acidity range was found in which indium occurred as cation only. This indicates the formation of anion complexes of indium in strongly acid medium as well as at pH~4. Determinations of solubility (Fig. 5) showed that the two hydrates $In_2(SO_4)_3 \cdot 10H_2O$ and $In_2(SO_4)_3 \cdot 5H_2O$ were stable in the concentration range 1-22% H_2SO_4. The acid indium sulfate $HIn(SO_4)_2 \cdot 3.5H_2O$ is formed in the concentration range 22-69% H_2SO_4. The two little stable complex acids $H_4In_2(SO_4)_5 \cdot 4H_2O$ and $H_3In(SO_4)_3$ which are formed besides the mentioned acid $H[In(SO_4)_2]$ were found for the first time in the concentration range 72-93% H_2SO_4. The solubility of complex indium acid is very low at a sulfuric acid content of 71% ($8 \cdot 10^{-7}\%$ $In_2(SO_4)_3$); therefore, practically no indium ions are present in the solution. In this manner, indium can be separated from some other elements which form soluble sulfates in solutions of ~70% sulfuric acid. The individual character of all compounds found in the system $In_2(SO_4)_3 - H_2SO_4 - H_2O$ was confirmed by

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Study of indium sulfates. ...

$S/078/62/007/004/011/016$
$B106/B101$

thermographic, crystal-optical, and x-ray diffraction studies. There are
7 figures and 3 tables.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S.
Kurnakova Akademii nauk SSSR (Institute of General and
Inorganic Chemistry imeni N. S. Kurnakov of the Academy of
Sciences USSR)

SUBMITTED: April 7, 1961

Fig. 5. Solubility (20^{0}C) in the system $In_2(SO_4)_3$ - H_2SO_4 - H_2O.

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DEYCHMAN, E.N.; RODICHEVA, G.V.

Solubility (20°) in the system $In_2(SO_4)_3 - K_2SO_4 - H_2O$.
Zhur. neorg. khim. 7 no.8:1994-1997 Ag '62. (MIRA 16:6)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.
Kurnakova AN SSSR.
          (Indium sulfate)   (Potassium sulfate)
                    (Solubility)

DEYCHMAN, E.N.; TARATUSHKINA, L.S.

Reaction of indium sulfate with ammonium sulfate. Zhur.neorg. khim. 7 no.10:2331-2334 O '62.   (MIRA 15:10)
         (Indium sulfate)   (Ammonium sulfate)

DEYCHMAN, E.N.; TANANAYEV, I.V.

Decomposition of lanthanum fluoride with oxalic acid and sodium hydroxide. Zhur.anal.khim. :7 no.2:250-251 Mr-Ap '62.
(MIRA 15:4)

1. N.S.Kurnakov Institute of General and Inorganic Chemistry, Academy of Sciences, U.S.S.R., Moscow.
(Lanthanum fluoride) (Sodium hydroxide)

DEYCHMAN, E.N.; TANANAYEV, I.V.

Solubility of thorium, lanthanum, and cerium fluorides in uranyl
nitrate solutions. Zhur.anal.khim. 17 no.1:134-136 Ja-F '62.
(MIRA 15:2)
1. N.S.Kurnakov Institute of General and Inorganic Chemistry,
Academy of Sciences, U.S.S.R., Moscow.
(Thorium fluoride) (Lanthanum fluoride) (Cerium fluoride)
(Uranyl nitrate)

YEZUCHEVSKAYA, V.M.; SYRKIN, Yu.K.; DEYCHMAN, E.N.

Dielectric polarization of crystal hydrates of indiumrubidium
sulfate. Zhur. neorg. khim. 9 no.6:1495 Je '63

(MIRA 17:8)

1. Institut obshchey i neorganicheskoy khimii imeni Kurnakova
AN SSSR.

L 14944-63
EPR/EWP(j)/EPF(c)/EWP(q)/EWT(m)/BDS   AFFTC/ASD/ESD-3
Ps-4/Pc-4/Pr-4   RM/WW/JD/JG

ACCESSION NR: AP3003762
B/0075/53/018/007/0903/0904

77

AUTHOR: Deychman, B. M.

TITLE: Determination of Beryllium hydroxyfluoride and hydroxychloride in beryllium fluoride and chloride

SOURCE: Zhurnal analiticheskoy khimii, v. 18, no. 7, 1963, 903-094

TOPIC TAGS: beryllium, titrimetric method, sodium fluoride, HCl

ABSTRACT: Author proposes a method for determining beryllium hydroxyfluoride in beryllium fluoride and chloride which is based on the fact that the beryllium ions form a stable complex with sodium fluoride which does not react with alkali in the presence of phenol red. At the same time, beryllium hydroxyfluoride reacts with separation of alkali. In the presence of only small amounts of hydroxyfluoride, the solution turns rose in color. Titrating with HCl solution in the presence of phenol red should be done with an excess of free fluoride in the solution. With high beryllium content in the solution, the titration is not too accurate and the indicator color is not clear. Error attains about 7%. The best titration results are obtained in the case of solutions which contain up to 0.5% beryllium fluoride. The additional amounts of caustic soda or hydrochloric acid which were

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ACCESSION NR: AP3003762

introduced into the beryllium fluoride solutions are titrated off quantitatively. Results of various determinations are tabulated. Orig. art. has: 3 tables.

ASSOCIATION: none

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DEYCHMAN, E.N.; BRITSYNA, Zh.A.

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     1. Institut obshchey i neorganicheskoy khimii imeni Kurnakova
     AN SSSR.